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Author: Prof. Nobuyuki Kaya
Kobe University, Japan

# IMPROVEMENT ON THE SANDWICH PANEL FOR SOLAR POWER SATELLITE

**Abstract**

We are planning the next demonstration for the Solar Power Satellite after our successful demonstration in Toronto. We are sure the fundamental beam control system of the microwave has been established by the demonstration, which is one of the most important and critical issues to realize the SPS. Our next plan is an orbiter experiment to carry out the beam control test with a pilot signal from the ground. We are launching small many satellites to extend the Furoshiki deployment, which can work a test bed to investigate the functions of the Sandwich panels and robotic technologies related to the SPS. We launch many Sandwich panels with the antenna element to work as an active phased array antenna after the construction of the large mesh. Each antenna element, which receives the pilot signal transmitted from the large parabola antenna on the ground, transmits a radio wave of the different frequency from the pilot signal by controlling the output phase to the ground. This space experiment is the first trial in the world to construct the real small Solar Power Satellite. While, we have to design the practical models of the SPS including the construction methods and the critical technologies.

We now re-design the sandwich panel which is composed of high power amplifier, driver amplifier, and power divider considering the arrangement of the power transmission antenna. In order to make the panel thinner and to reduce the whole weight, we improve the sandwich panel with the new double layer system, which is composed of an antenna layer and an amplifier layer. The wired antennas are arranged in the triangular array at the antenna layer, while we arrange high power amplifier, driver amplifier, and the divider at the amplifier layer. We succeed in develop the new power divider to reduce the number of the layers.

We will describe about our recent investigation on our conceptual design of the practical Solar Power Satellite in our presentation.